Developmental Biology

An International Journal Published under the Auspices of the Society for Developmental Biology

EDITOR-IN-CHIEF: Anthony P. Mahowald

ASSOCIATE EDITORS

Ira Black
Peter J. Bryant
Charles P. Emerson, Jr.
David Epel
David Hirsh
Richard Hynes
William F. Loomis, Jr.
L. Dennis Smith
Davor Solter
Robert L. Trelstad
James Weston
Fred H. Wilt

EDITORIAL ASSISTANT: Juanita Parker

ADVISORY EDITOR
Igor B. Dawid

VOLUME 82, 1981

ACADEMIC PRESS
New York London Toronto Sydney San Francisco Tokyo

Copyright © 1981 by Academic Press, Inc.

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (21 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1981 articles are the same as those shown for current articles.

MADE IN THE UNITED STATES OF AMERICA

Contents of Volume 82

NUMBER 1, FEBRUARY 1981

Full Papers

MARTHA C. BOHN, MENEK GOLDSTEIN, AND IRA B. BLACK. Role of Glucocorticoids in Expression of the Adrenergic Phenotype in Rat Embryonic Adrenal Gland 1

RYOICHI MATSUDA, TAKASHI OBINATA, AND YUTAKA SHIMADA. Types of Troponin Components during Development of Chicken Skeletal Muscle 11

ROBERT S. DECKER. Gap Junctions and Steroidogenesis in the Fetal Mammalian Adrenal Cortex 20

A. SCOTT GOUSTIN AND FRED H. WILT. Protein Synthesis, Polyribosomes, and Peptide Elongation in Early Development of *Strongylocentrotus purpuratus* 32

JOHN E. SULSTON AND H. ROBERT HORVITZ. Abnormal Cell Lineages in Mutants of the Nematode *Caenorhabditis elegans* 41

MICHAEL D. COUGHLIN, EMANUEL M. BLOOM, AND IRA B. BLACK. Characterization of a Neuronal Growth Factor from Mouse Heart-Cell-Conditioned Medium 56

MAURICE J. PESCITELLI, JR., AND DAVID L. STOCUM. Nonsegmental Organization of Positional Information in Regenerating *Ambystoma* Limbs 69

JEANNE LORING, BENGT GLIMELIUS, CAROL ERICKSON, AND JAMES A. WESTON. Analysis of Developmentally Homogeneous Neural Crest Cell Populations *in Vitro*. I. Formation, Morphology and Differentiative Behavior 86

BENGT GLIMELIUS AND JAMES A. WESTON. Analysis of Developmentally Homogeneous Neural Crest Cell Populations *in Vitro*. II. A Tumor-Promoter (TPA) Delays Differentiation and Promotes Cell Proliferation 95

DAVID K. WILCOX AND MAURICE SUSSMAN. Defective Cell Cohesivity Expressed Late in the Development of a *Dictyostelium discoideum* Mutant 102

HELGA JANTZEN. Control of Actin Synthesis during the Development of *Acanthamoeba castellanii* 113

KATHRYN V. ANDERSON AND JUDITH A. LENGYEL. Changing Rates of DNA and RNA Synthesis in *Drosophila* Embryos 127

PIERRE COUBLE, ANNIE GAREL, AND JEAN-CLAUDE PRUDHOMME. Complexity and Diversity of Polyadenylated mRNA in the Silk Gland of *Bombyx mori*: Changes Related to Fibroin Production 139

BEN H. LEICHTLING, CLAUDE TIHON, EVA SPITZ, AND H. V. RICKENBERG. A Cytoplasmic cAMP-Binding Protein in *Dictyostelium discoideum* 150

FELICITY E. B. MAY AND JOHN KNOWLAND. Patterns of Protein Synthesis in Livers of *Xenopus laevis* during Metamorphosis: Effects of Estrogen in Normal and Thyrostatic Animals 158

Brief Notes

FRANK E. STOCKDALE, HELEN BADEN, AND NEERJA RAMAN. Slow Muscle Myoblasts Differentiating *in Vitro* Synthesize Both Slow and Fast Myosin Light Chains 168

M. NICOLA WOODROOFE AND LARRY F. LEMANSKI. Two Actin Variants in Developing Axolotl Heart 172

JAMES A. CARDELLI, DAVID A. KNECHT, AND RANDALL L. DIMOND. Membrane-Bound and Free Polysomes in *Dictyostelium discoideum*. I. Isolation and Developmental Effects on Size and Distribution 180

CHARLES E. DINSMORE. Regulative Ability of the Regenerating Urodele Tail: The Effect of Unilateral Soft Tissue Ablation 186

FLORENCE MOOG AND LESLIE J. WIEMERSLAGE. Chick Embryo Intestine in Culture: Superinduction of Alkaline Phosphatase and Maltase Activities by Actinomycin D 192

FRANK J. LONGO. Effects of Concanavalin A on the Fertilization of Sea Urchin Eggs 197

Feature f-1

Full Papers

SUI-FOH YU AND DON P. WOLF. Polyspermic Mouse Eggs Can Dispose of Supernumerary Sperm ... 203

N. C. RATH AND A. H. REDDI. Changes in Polyamines, RNA Synthesis, and Cell Proliferation during Matrix-Induced Cartilage, Bone, and Bone Marrow Development ... 211

A. H. REDDI AND KLAUS E. KUETTNER. Vascular Invasion of Cartilage: Correlation of Morphology with Lysozyme, Glycosaminoglycans, Protease, and Protease-Inhibitory Activity during Endochondral Bone Development ... 217

REINHARD F. STOCKER AND PETER A. LAWRENCE. Sensory Projections from Normal and Homoeotically Transformed Antennae in *Drosophila* ... 224

STUART A. KAUFFMAN AND ELIZABETH LING. Regeneration by Complementary Wing Disc Fragments of *Drosophila melanogaster* ... 238

JOHN N. BARRETT, ELLEN F. BARRETT, AND LORI B. DRIBIN. Calcium-Dependent Slow Potassium Conductance in Rat Skeletal Myotubes ... 258

BYRNE W. MAYER, JR., ELIZABETH D. HAY, AND RICHARD O. HYNES. Immunocytochemical Localization of Fibronectin in Embryonic Chick Trunk and Area Vasculosa ... 267

DOMINIC POCCIA, JANE SALIK, AND GEOFFREY KRYSTAL. Transitions in Histone Variants of the Male Pronucleus following Fertilization and Evidence for a Maternal Store of Cleavage-Stage Histones in the Sea Urchin Egg ... 287

JOHN D. DAVID, WILLIAM M. SEE, AND CHRYS-ANN HIGGINBOTHAM. Fusion of Chick Embryo Skeletal Myoblasts: Role of Calcium Influx Preceding Membrane Union ... 297

JOHN D. DAVID AND CHRYS-ANN HIGGINBOTHAM. Fusion of Chick Embryo Skeletal Myoblasts: Interactions of Prostaglandin E_1, Adenosine 3′:5′ Monophosphate, and Calcium Influx ... 308

Z. C. DHANARAJAN AND BURR G. ATKINSON. Thyroid-Hormone-Induced Differentiation and Development of Anuran Tadpole Hind Limbs: Detection and Quantitation of M-Line Protein and α-Actinin Synthesis ... 317

LORETTE C. JAVOIS AND LAURIE E. ITEN. Position of Origin of Donor Posterior Chick Wing Bud Tissue Transplanted to an Anterior Host Site Determines the Extra Structures Formed ... 329

LORETTE C. JAVOIS, LAURIE E. ITEN, AND DOUGLAS J. MURPHY. Formation of Supernumerary Structures by the Embryonic Chick Wing Depends on the Position and Orientation of a Graft in a Host Limb Bud ... 343

FELICITY E. B. MAY, BRUCE R. WESTLEY, AND JOHN KNOWLAND. Vitellogenin Synthesis and Characterisation of the Liver Estrogen Receptor in the Neotenous Salamander *Ambystoma mexicanum* ... 350

MARTIN CHALFIE AND JOHN SULSTON. Developmental Genetics of the Mechanosensory Neurons of *Caenorhabditis elegans* ... 358

Brief Notes

HERVÉ LESOT, MOHAMMED OSMAN, AND JEAN VICTOR RUCH. Immunofluorescent Localization of Collagens, Fibronectin, and Laminin during Terminal Differentiation of Odontoblasts ... 371

BONNIE LEE HYLANDER, JOHN ANSTROM, AND ROBERT G. SUMMERS. Premature Sperm Incorporation into the Primary Oocyte of the Polychaete *Pectinaria*: Male Pronuclear Formation and Oocyte Maturation ... 382

THOMAS T. F. HUANG, JR. AND PATRICIA G. CALARCO. Evidence for the Cell Surface Expression of Intracisternal A Particle-Associated Antigens during Early Mouse Development ... 388

DOUGLAS E. CHANDLER AND JOHN HEUSER. Postfertilization Growth of Microvilli in the Sea Urchin Egg: New Views from Eggs that Have Been Quick-Frozen, Freeze-Fractured, and Deeply Etched ... 393

Erratum

Volume 80, Number 1, November 1980: George P. Casale, Edward A. Khairallah, and Joseph A. Grasso, "An Analysis of Hemoglobin Synthesis in Erythropoietic Cells," pp. 107–119 ... 401

Author Index for Volume 82 ... 402

Features ... f-1, f-2

The Subject Index for Volume 82 will appear in the December 1981 issue as part of a cumulative index for the year 1981.